PONY

Maths

For The Primary Stage

4th. Primary



Lessons

First Term 2018

Unit 1

Large Numbers and Operations on them

Lesson 1 Hundred Thousand

Thousand					
Hundreds	Tens	Units	Hundreds	Tens	Units
4	5	0	6	0	3

four hundred fifty thousand , six hundred and three.

Write in words

300 000 ....

800 111 ....

....

204 550 ....

....

458 201 ....

....

457 123 ....

....

....

200 100 ....

....

-Write in digits:

Two hundred thousand ....

Four hundred and three thousand ....

Seven hundred and ninety thousand ....

Four hundred thousand and one ....

Eight hundred thousand and twenty ....

Seven hundred two thousand and eleven ....

Six hundred thirty thousand and four hundred ....

Three hundred thousand , two hundred and eighty ....

Five hundred one thousand , four hundred and four ....

Seven hundred eighty two thousand , two hundred and sixty nine

....

Write the value and the place value of the circled digit in each of the following numbers.

numbers.	the value	the place value
27 351		
543 092		
156 348		
467 900		

Using the suitable sign < , > or = in each ☐.

132 045	☐	93 245	85 679	☐	302 001
100 074	☐	74 001	321 587	☐	321 587

Write the greatest and the smallest number that can be formed from the number cards in each of the following.

4	1	5	3	2	6

greatest ……………………………

smallest ……………………………

Complete

a Write the greatest 6-digit number. ……………………

b Write the greatest number formed from 6 different digits.

……………………

c Write the smallest 6-digit number. ……………………

d Write the smallest number formed from 6 different digits.

……………………

e Write the smallest number formed from 6 different digits and their sum is 15. ……………………

f Write the smallest number formed from 6 different digits and their sum is 17. ……………………

g Write the greatest number formed from 6 different digits and the sum of its units and tens digits is 7.

……………………

Lesson 2 Millions

Million			Thousand					
Hundreds	Tens	Units	Hundreds	Tens	Units	Hundreds	Tens	Units
5	2	3	4	5	0	6	0	3

five hundred twenty three million ,
four hundred fifty thousand , six hundred and three.

Write in words

1 000 000 ....

145 000 000 ....
....

2 800 111 ....
....
....

4 204 550 ....
....
....

10 245 120 ....
....
....

200 457 123 ....
....
....

-Write in digits:

Two million	....
Five million and nine hundred thousand	....
Eight million and Nine hundred six thousand	....
Two million and three hundred forty six thousand	....
Ten million,one thousand , six hundred and two	....
Twenty five million , seven hundred nine thousand and eleven	....
Thirty seven million , six hundred thirty thousand and four hundred	....
Forty nine million, two hundred twenty five thousand, nine hundred and three	....
Two hundred thirty two million , five hundred one thousand , six hundred and thirty four	....

Complete as the example

Example: 7 435 218 = 7 million + 435 thousand + 218

a 2 405 396 = ... million + ... thousand + ...

b 22 153 027 = ... million + ... thousand + ...

c 288 300 597 = ... million + ... thousand + ...

d .... = 126 million + 412 thousand + 576

e .... = 9 million + 18 thousand + 72

f .... = 44million + 4 thousand + 4

Complete as the example.

Example: 98 230 156 = 156 + 230 000 + 98 000 000

a 352 936 147 = 147 + ... + ...

b 23 600 156 = ... + ... + ...

c 803 651 028 = ... + ... + ...

d 10 800 900 = ... + ... + ...

e 6 000 834 = ... + ... + ...

Lesson 3 Milliards(Billions)

Milliard			Million			Thousand					
Hundreds	Tens	Units	Hundreds	Tens	Units	Hundreds	Tens	Units	Hundreds	Tens	Units
3	2	0	5	2	3	4	5	0	6	0	3

three hundred twenty milliard, five hundred twenty three million , four hundred fifty thousand , six hundred and three.

Write in words

1 000 000 000 ....

3 400 000 000 ....

4 145 000 000 ....
....

....
4 204 550 002 ....
....

12 701 405 540 ....
....
....
....

-Write in digits:

Two milliard ....

Five milliard and nine million ....

Eight milliard ,five million, six thousand and two hundred ....

Thirty milliard , ninety million , fifty thousand and forty ....

Sixteen milliard , Two hundred fifty million,
three hundred forty six thousand and twenty ....

Four milliard , three hundred sixteen thousand
two hundred and one ....

Read the following numbers, then complete.

a 8 719 645 302 ...... milliard, ... million, ... thousand and ......

b 6 539 006 475 ...... milliard, ... million, ... thousand and ......

c ---- ---- ---- ---- 2 milliard, 163 million, 900 thousand and 8

d ---- ---- ---- ---- 5 milliard, 80 million, 70 thousand and 506

Write the greatest and the smallest number formed from the digits 7 , 4 , 0 , 5, 3 , 8 , 9 and 6 .

The smallest number is ....

The greatest number is ....

Write the greatest and the smallest 7-digit number formed from the digits 3 , 1 , 8 and 9 .

The smallest number is ....

The greatest number is ....

Write the greatest and the smallest 8-digit number formed from the digits 2 and 4 .

The smallest number is ....

The greatest number is ....

Find:

two 10-digit numbers with the difference between them is one milliard . ... and ....

two 10-digit numbers with the difference between them is one million . ... and ....

two 10-digit numbers with the difference between them is one thousand . ... and ....

Lesson 4 Operation on large Numbers

Addition & Subtraction

Add:

$$\begin{array}{r} 5\,3\,7\,8\,5\,5\,8 \\ +\,8\,2\,0\,1\,8\,7\,2 \\ \hline \ldots\ldots\ldots \end{array} \qquad \begin{array}{r} 4\,5\,6\,0\,0\,7\,2 \\ +\,4\,7\,1\,2\,7\,8\,8 \\ \hline \ldots\ldots\ldots \end{array}$$

4 858 443 + 451 336 = ………………

99 999 999 + 1 = ……………………

Subtract:

$$\begin{array}{r} 9\,3\,7\,0\,0\,0\,8 \\ -\,8\,7\,0\,0\,2\,7\,7 \\ \hline \ldots\ldots\ldots \end{array} \qquad \begin{array}{r} 5\,3\,0\,7\,3\,8\,9 \\ -\quad 8\,9\,0\,7\,0\,8 \\ \hline \ldots\ldots\ldots \end{array}$$

4 058 443 - 891 836 = ………………

1 000 000 000 - 1 = ……………………

Ramy bought a house for LE 85 750 and a car for LE 65 250

How much money did he pay ?

……………………………………………………………………………

Ahmed had LE 855 000 . He bought a car for LE 70 500

find the remaining money with him.

……………………………………………………………………………

Samy had LE 850 000 . He bought a house for LE 280 000 and a car for LE 45 000 .
find the remaining money.

……………………………………………………………………………………

……………………………………………………………………………………

The population of Egypt in 1995 was about 65 520 000 , where as it was 71 335 000 in 1999.
Find the difference between the two numbers.

……………………………………………………………………………………

In the previous year 1 356 009 tourists visited Egypt and in this year , 2 567 001 tourists .
Find the total number of tourists in those two years .

……………………………………………………………………………………

A merchant bought 1 356 789 pens .He sold 989 686 pens of them .Find the remainder of the pens .

……………………………………………………………………………………

Find the product:-

$$\begin{array}{r} 23 \\ \times \quad 5 \\ \hline \dots \end{array} \qquad \begin{array}{r} 743 \\ \times \quad 4 \\ \hline \dots \end{array} \qquad \begin{array}{r} 725 \\ \times \quad 5 \\ \hline \dots \end{array} \qquad \begin{array}{r} 3547 \\ \times \quad 4 \\ \hline \dots \end{array}$$

234 X 4 = ………   451 X 2 = ………

Multiplication

Multiply 243 X 34

243 X 34 = 243 X (30 + 4)
= (243 X 30) + (243 X 4)
= 7290 + 972 = 8262

```
    2 4 3
  X   3 4      34 = 4 + 30
  -------
      972      243 X 4
 +  7290       243 X 30
  -------
    8262
```

Multiply

```
   5 3          3 6          456
 X 1 2        X 1 4        X  23
 -----        -----        -----
 ......       ......       ......
+......      +......      +......
 -----        -----        -----
 ......       ......       ......
```

```
  2503         1308         4005
 X  24        X  65        X  35
 -----        -----        -----
 ......       ......       ......
+......      +......      +......
 -----        -----        -----
 ......       ......       ......
```

132 × 75 = ... 209 × 55 = ... 5088 × 85 = ...

```
   132          ......       ......
 X  75        X ......     X ......
 -----        -----        -----
 ......       ......       ......
+......      +......      +......
 -----        -----        -----
 ......       ......       ......
```

1) January has 31 days .

How many hours are there in this month .

....

....

2) A theatre has 45 rows each consists of 39 seats

How many seats are there in the theatre ?

....

....

3) Samy traveled at a speed of 45 metres per minute , ridinghis bicycle . What is the distance he travels in a quarter of an hour ?

A quarter of an hour = 15 minutes

....

....

4) Fady bought 15 kilograms of apples for PT 825 each .

Find the total price of the apples .

....

....

6) Find the product of 42 X 12 = ...

Then deduce the result of the following.

420 X 12 = ...

42 X 120 = ...

420 X 120 = ...

4200 X 12 = ...

42 X 1200 = ...

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Dividing by a 1-digit number

Find the quotient of the following : (8 3 4 ÷ 3)

8 3 4 ÷ 3 = 2 7 8

Dividend (834) — Divisor (3) — Quotient (278)

```
      2 7 8
   ________
 3 | 8 3 4
   - 6
   ------
     2 3
   - 2 1
   ------
       2 4
   -   2 4
   ------
       0 0
```

Divide

$24 \div 3$	$33 \div 4$	$42 \div 6$
$50 \div 8$	$72 \div 9$	$11 \div 3$
$32 \div 4$	$59 \div 7$	$48 \div 6$

Divide

5 ⟌ 65	6 ⟌ 72	3 ⟌ 81
5 ⟌ 140	6 ⟌ 222	3 ⟌ 255
5 ⟌ 640	6 ⟌ 822	3 ⟌ 714

$5\overline{)4445}$ $4\overline{)9724}$ $5\overline{)6045}$

---

* If 332 X 7 = 2324 then 2324 ÷ 7 = ...

2324 ÷ 332 = ...

* Complete :

445 ÷ ...... = 5 455 ÷ ...... = 7

...... ÷ 6 = 552 ...... ÷ 4 = 123

---

* A hotel has 176 rooms divided equally among 8 floors .
How many rooms are there in each floor ?

....

Dividing by a 2-digit number

Find the quotient of the following : (5 8 5 ÷ 4 5)

5 8 5 ÷ 4 5 = 1 3

Dividend — Divisor — Quotient

```
     0 1 3
45 ) 5 8 5
     4 5
     1 3 5
     1 3 5
     0 0 0
```

Divide

52) 1 5 6

46) 3 3 4

75) 3 7 5

38) 2 6 6

51) 4 2 8

26) 1 3 0

74) 4 4 4

45) 3 7 7

57) 2 8 5

Divide :

$32 \overline{)\,800}$

$42 \overline{)\,966}$

$21 \overline{)\,903}$

$63 \overline{)\,7749}$

$72 \overline{)\,10224}$

$53 \overline{)\,5724}$

$24 \overline{)\,5616}$

$37 \overline{)\,15244}$

$64 \overline{)\,20736}$

Draft

A hotel has 204 rooms , divide equally among number of floors each floor has 12 rooms .
How many floors are there in the hotel ?

A tourism agency wanted to book some buses to transports 672 tourists to the Giza pyramids.
If each bus has holds 48 tourists .
How many buses are needed ?

In his birthday , Samer bought 7 boxes of soft drink For PT 5880 .
How much does each box cost

Nada bought a car for LE 57 900 , She paid LE 7 500 in cash and the rest will be pay in 42 equal monthly installments
find the value of each installment

Unit 1 General Exercises

1 Find the result for each of the following.

a $87\ 562 + 5\ 429 =$ ....

b $39\ 057 - 14\ 583 =$ ....

c $3\ 478 \times 9 =$ ....

d $721\ 014 \div 7 =$ ....

e $267 \times 18 =$ ....

f $62\ 550 \div 25 =$ ....

---

2 Complete.

a Write the value of the underlined digit in each of the following numbers.

<u>3</u> 256 812 159 , 9<u>5</u>8 214 100 , 7 100 <u>2</u>79 312

.... , ... , ...

b Write the numbers of a in letters.

3 256 812 159 ....

....

....

958 214 100 ....

....

....

7 100 279 312 ....

....

....

3 Choose the number closest to the correct answer.

a 997 815 100 + 1 475 987 = ...

(999 million , milliard , 990 million)

b 3 259 145 000 – 3 059 142 000 = ...

(3 000 , 100 million , 200 million)

c 8 × 6 958 × 125 = ...

(7 million , 6 million , 5 million)

d (4 000 ÷ 4) × 999 = ...

(one million , one milliard , 900 thousand)

---

4 a If 756 pupils in a school are distributed equally among 18 classes, find the number of pupils in each class.

....

....

b Find the number that if multiplied by 17, the product will be 1 156.

....

....

Unit 2

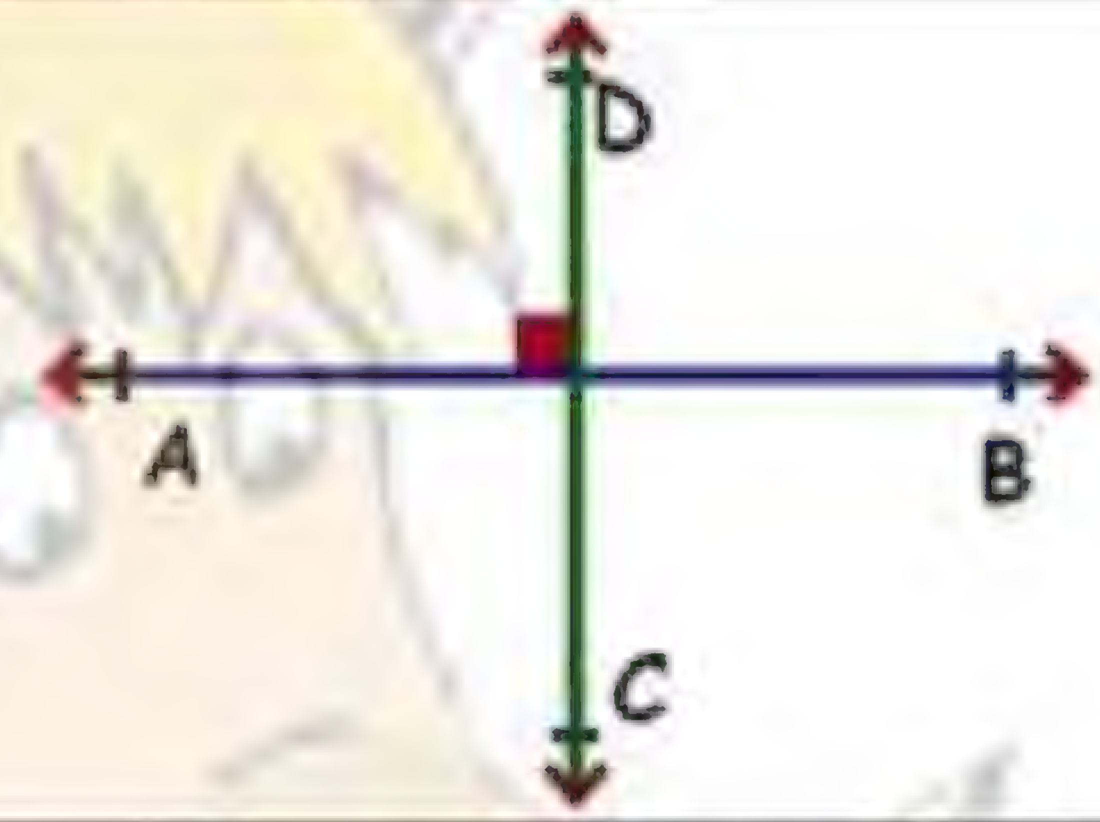
Geometry

Lesson 1 Relation between Two Straight Lines and Geometric Constructions

Parallel, intersecting and Perpendicular (orthogonal) lines

The two perpendicular (orthogonal) lines :

- they form four right angles at their point of intersection
- $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ or $\overleftrightarrow{CD} \perp \overleftrightarrow{AB}$
  $\overleftrightarrow{AB}$ is perpendicular to $\overleftrightarrow{CD}$



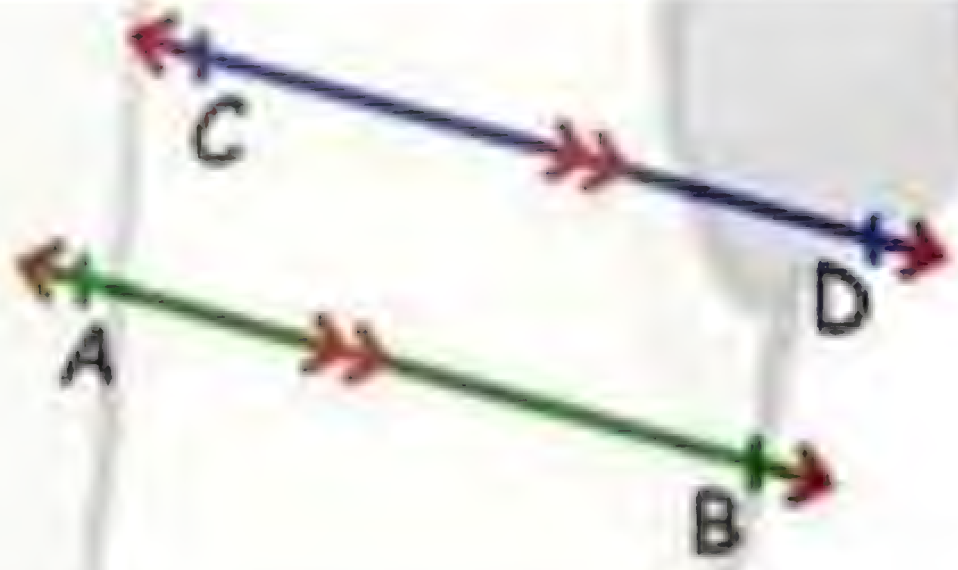
The two intersecting lines :

- They form four angles (Acute or obtuse not right)
- They intersecting at one point
  $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are intersecting at point M



The two parallel lines :

- They never intersect at any points
- $\overleftrightarrow{AB}$ // $\overleftrightarrow{CD}$ or $\overleftrightarrow{CD}$ // $\overleftrightarrow{AB}$
- $\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{CD}$



1) ABCD is a rectangle and AC , BD are two diagonals
Complete with (Parallel , intersecting or Perpendicular)

$\overline{AC}$ and $\overline{BD}$ are .... at M

$\overline{AB}$ and $\overline{DC}$ are ....

$\overline{AB}$ and $\overline{AC}$ are .... at ....

$\overline{BC}$ and $\overline{BD}$ are .... at ....

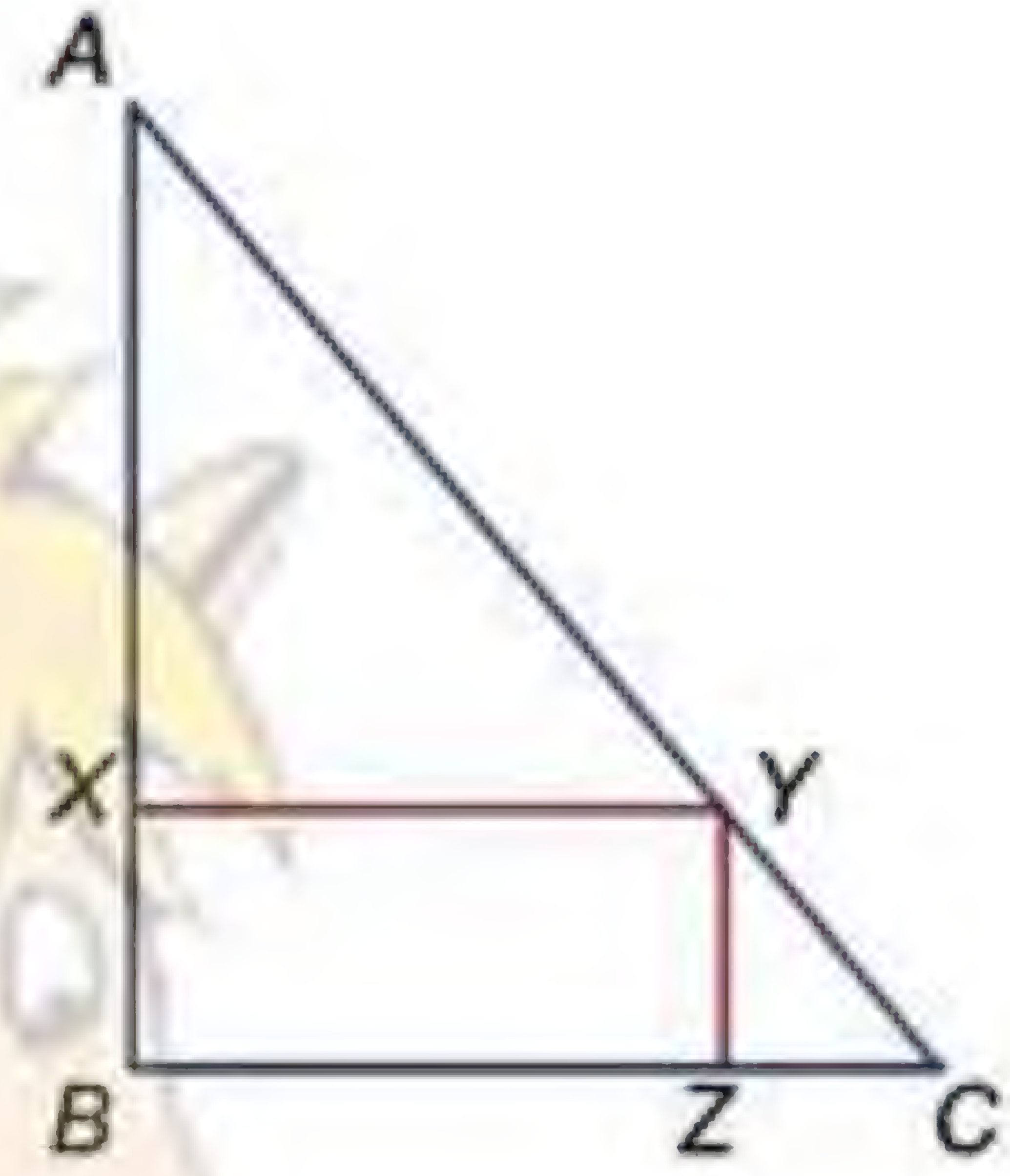
$\overline{AD}$ and $\overline{BC}$ are ....

$\overline{BC}$ and $\overline{BA}$ are ....

$\overline{BC}$ and $\overline{CD}$ are ....



Notice the figure opposite, then complete.



a $\overleftrightarrow{AB}$ .... $\overleftrightarrow{BC}$ ($\perp$ or //)

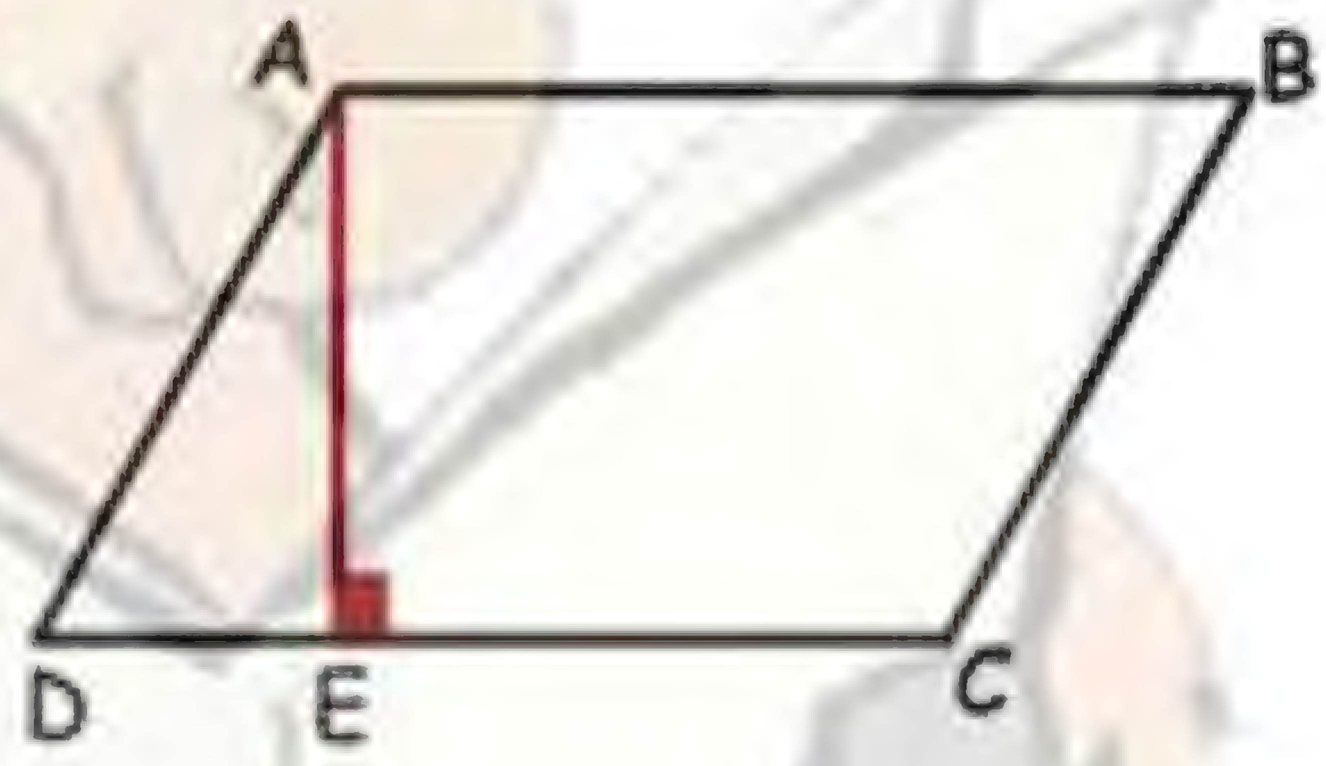
b $\overleftrightarrow{AB}$ .... $\overleftrightarrow{YZ}$ ($\perp$ or //)

c $\overleftrightarrow{XY}$ .... $\overleftrightarrow{BC}$ ($\perp$ or //)

d $\overleftrightarrow{AY}$ intersects with $\overleftrightarrow{BZ}$ at the point ....

e $\overleftrightarrow{YC}$ intersects with $\overleftrightarrow{BX}$ at the point ....

Complete using (// , $\perp$ or intersecting)



$\overleftrightarrow{AB}$ .... $\overleftrightarrow{CD}$ $\overleftrightarrow{AE}$ .... $\overleftrightarrow{CD}$

$\overleftrightarrow{AD}$ .... $\overleftrightarrow{BC}$ $\overleftrightarrow{AE}$ .... $\overleftrightarrow{AB}$

Choose the correct answer between brackets :

a Any two lines that never intersect are called ....

(orthogonal. or parallel. or intersecting and not orthogonal.)

b Any two lines that intersect at a point and make four right angles are called ....

(parallel. or intersecting and not orthogonal. or perpendicular.)

c The two intersecting lines intersect at ....

(one point. or two points. or zero points.)

d The two parallel lines intersect at ....

(two points. or zero points. or one point.)

e The two parallel lines make .... angles. (1 or 3 or 0)

How to draw a perpendicular to a straight line from a point on it.



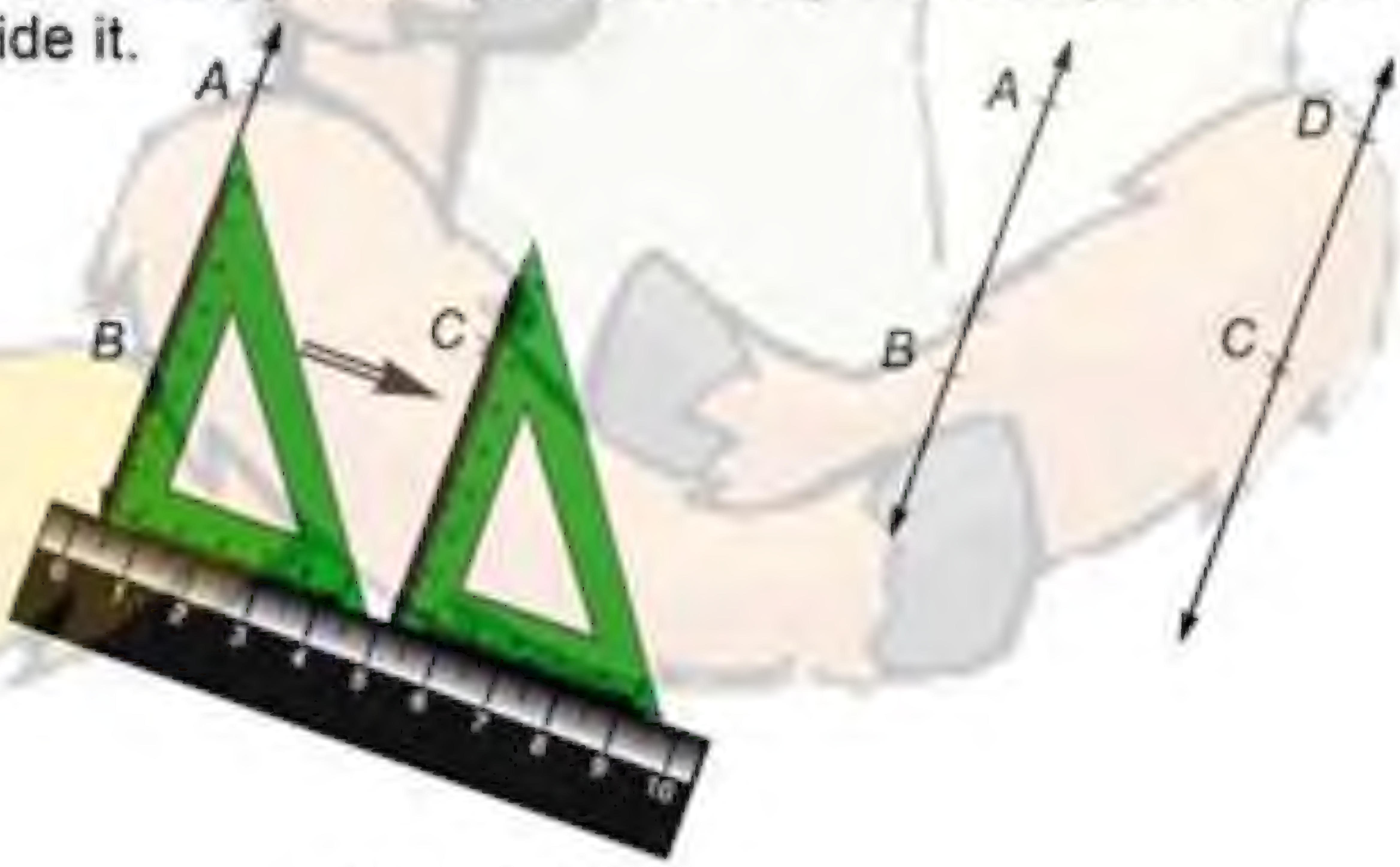
In this case, we write $\overline{AB} \perp \overleftrightarrow{CD}$.

How to draw a perpendicular to a straight line from a point outside it.



In this case, we write $\overline{AB} \perp \overleftrightarrow{CD}$.

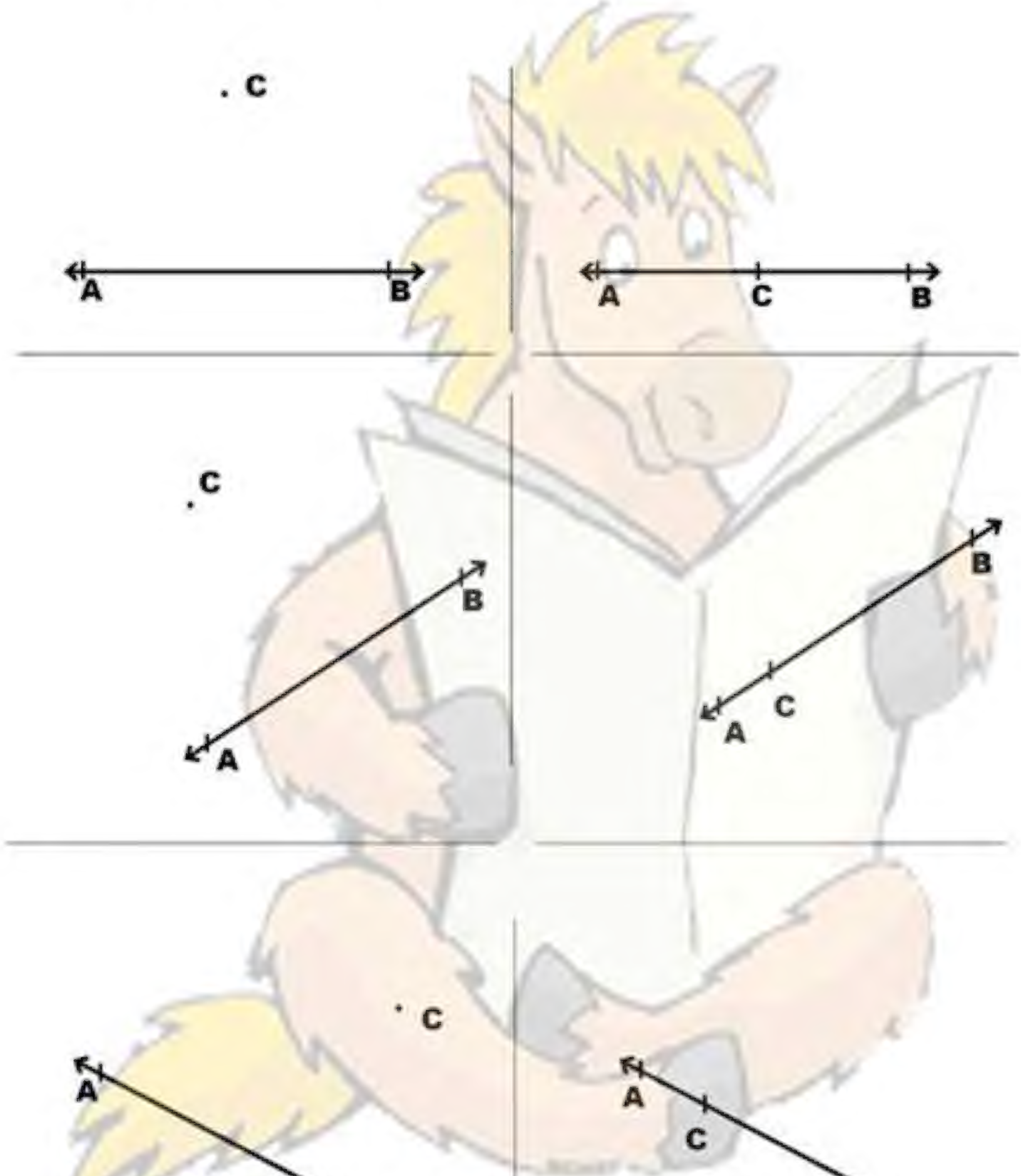
How to draw a straight line parallel to a given straight line from a point outside it.



In this case, we write $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$.

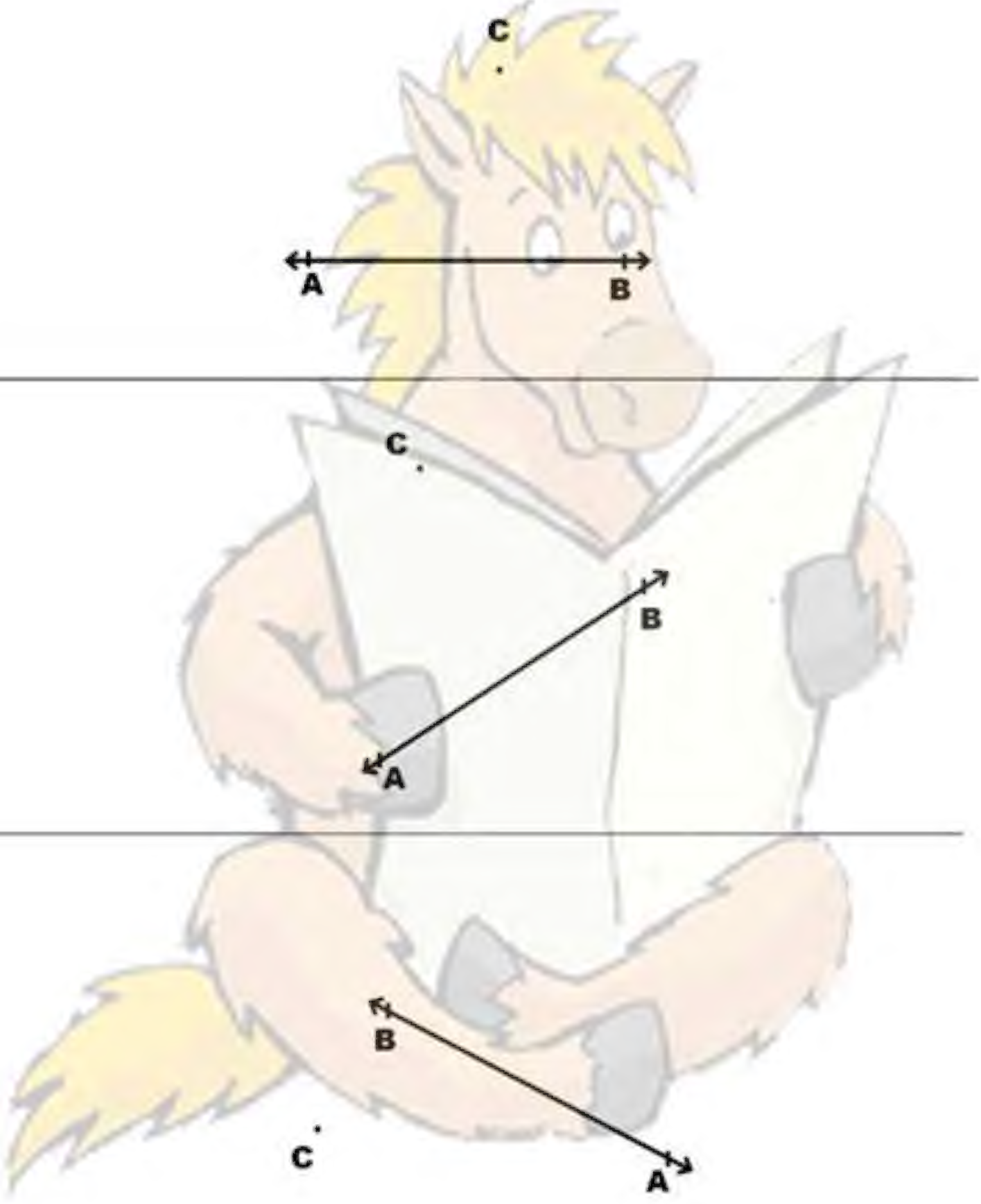
Draw a perpendicular and a parallel

Draw $\overleftrightarrow{CD} \perp \overleftrightarrow{AB}$ in the following :



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Draw $\overleftrightarrow{CD}$ // $\overleftrightarrow{AB}$ in the following :



Lesson 2 Polygons

The Polygon is a closed shape formed from three line segments or more





Triangle
3 sides



Quadrilateral
4 sides



Pentagon
5 sides



Hexagon
6 sides



Heptagon
7 sides



Octagon
8 sides

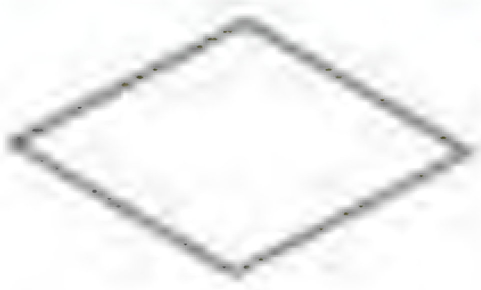
The number of sides of any polygon is equal the number of its vertices and equal to the number of its angles

Quadrilateral Shapes

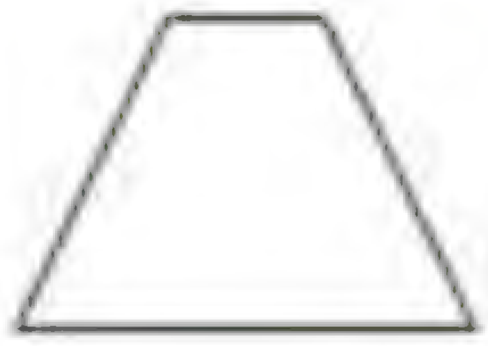
- Parallelogram
- Rectangle
- Rhombus
- Square
- Trapezium



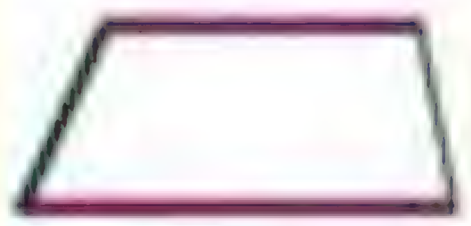








The quadrilateral Shapes

Quadrilateral	Angles	Sides	Diagonals
 Parallelogram	1) 2 acute angles + 2 obtuse angles 2) Each two opposite angles are equal. 3) The sum of any two consecutive angle is 180°	Each two opposite sides are equal and parallel	- Bisect each others
 Rectangle	4 right angles	Each two opposite sides are equal and parallel	- Bisect each others - Equal in length
 Rhombus	1) 2 acute angles + 2 obtuse angles 2) Each two opposite angles are equal. 3) The sum of any two consecutive angle is 180°	1) All sides are equal in length. 2) Each two opposite sides are parallel	- Bisect each others - Perpendicular
 Square	4 right angles	1) All sides are equal in length. 2) Each two opposite sides are parallel	- Bisect each others - Equal in length - Perpendicular
 Trapezium	Only a pair of sides are parallel and not equal		

Join each figure to the suitable name.



Rectangle	Trapezium	Triangle	Rhombus	Square	Parallelogram

Put (✔) for the correct statement and (✗) for the incorrect one and correct the mistake.

a The parallelogram is a quadrilateral in which each two opposite sides are parallel. ( )

b The rectangle is a quadrilateral in which each of its four angles is a right angle. ( )

c The rhombus is a quadrilateral in which all sides are equal in length. ( )

d The measure of each angle of the square = 45°. ( )

e Any angle of the four angles formed from the intersection of two straight lines is a right angle. ( )

f Any angle of the four angles formed from the intersection of two perpendicular straight lines is a right angle. ( )

g Two parallel straight lines are two non-intersecting straight lines. ( )

h Two perpendicular straight lines on the same straight lines are intersecting straight lines. ( )

i The diagonals of any square are perpendicular. ( )

Complete :

a The polygon which has four sides is called a ....

b The hexagon is a polygon with .... sides , but the .... is a polygon with three sides.

c In the square , all angles are .... angle.

d The two diagonals of the rectangle are .... and ....

e In the parallelogram , every two opposite sides are .... and ....

f Each two opposite sides are parallel in .... , ... , ... and ....

g Each two opposite sides are equal in length in ……………… , ……………… , ……………… and ………………

h The four sides are equal in length in ……………… and ………………

i The four angles are right in ……………… and ………………

j The diagonals in ……………… and ……………… are equal in length and bisect each other.

Write only one difference between each of the following :

a The square and the rectangle.

…………………………………………………………………………………………

…………………………………………………………………………………………

b The rhombus and the parallelogram.

…………………………………………………………………………………………

…………………………………………………………………………………………

c The square and the cube.

…………………………………………………………………………………………

…………………………………………………………………………………………

Draw the square ABCD whose side length 3 cm long.



Draw the rectangle ABCD in which AB = 5 cm and BC = 4 cm.



Draw the Square ABCD in which AB = 4 cm, then complete.

AB = ... = ... = ... = ... cm.

$\overline{AB}$ // ......

$\overline{BC}$ // ......

$\overline{AB}$ ⊥ ......

$\overline{CD}$ ⊥ ......

$\overline{BD}$ ⊥ ......

Draw the rectangle XYZL in which its dimensions are 5 cm and 2 cm, then complete.

XY = ... = ... cm

YZ = ... = ... cm.

$\overline{XY}$ // ...... and $\overline{XY}$ ⊥ ......

$\overline{YZ}$ // ...... and $\overline{YZ}$ ⊥ ......

Draw the rectangle XYZL in which its dimensions are **6** cm and **4** cm, then complete.

XY = ... = ... cm

YZ = ... = ... cm.

$\overline{XY}$ // ...... and $\overline{XY}$ ⊥ ......

$\overline{YZ}$ // ...... and $\overline{YZ}$ ⊥ ......

Lesson 3 The Triangle

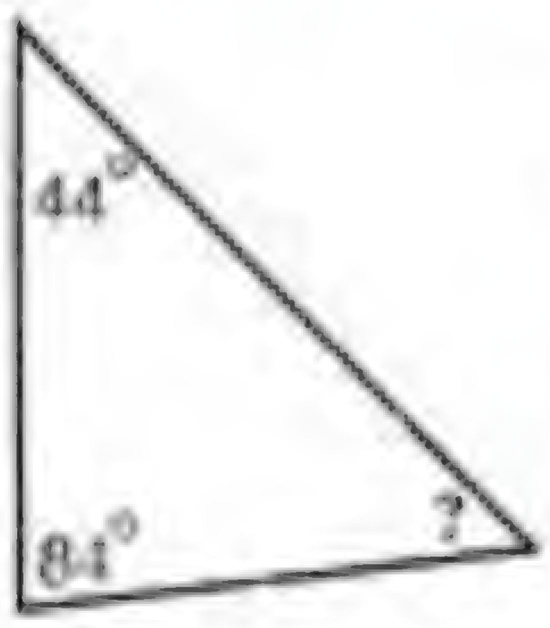
The sum of the measures of the (interior) angles of a triangle = 180°

1) In the triangle ABC , if m ∠A = 100° , m ∠B = 45°
   then m ∠C = ...

2) In the triangle XYZ, if m ∠ X = m ∠ Y and m ∠ Z = 40°
   Find the measure of ∠ X and ∠ Y
   m ∠ X + m ∠ Y = ...
   m ∠ X = m ∠ Y = ...

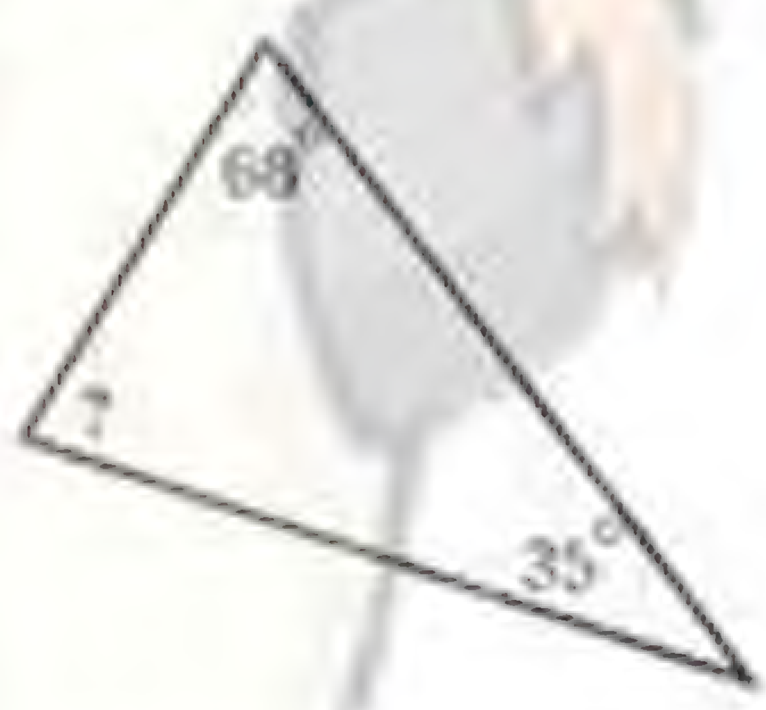
3) In the triangle XYZ, if m ∠ X = m ∠ Y = m ∠ Z
   Find the measure of ∠ X , ∠ Y and ∠ Z
   m ∠ X = m ∠ Y = m ∠ Z = ...

In each of the following triangles , find the measure of the angle that marked with " ? " "without using the protractor"









.... | .... | .... | ....
.... | .... | .... | ....

Which of the following can be the angles of a triangle :

a m (∠ X) = 53° , m (∠ Y) = 72° and m (∠ Z) = 55°
....

b m (∠ F) = 70° , m (∠ R) = 56° and m (∠ H) = 60°
....

c m (∠ Q) = 33° , m (∠ S) = 44° and m (∠ T) = 103°
....

d m (∠ A) = m (∠ B) = 40° and m (∠ C) = 88°
....

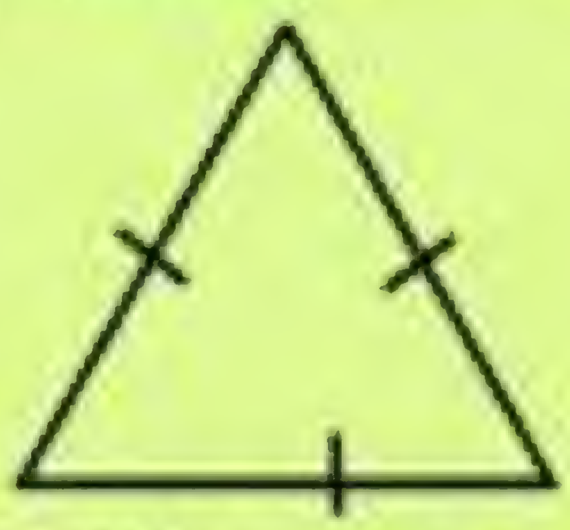
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Types of Triangles

* The triangle is a polygon that has three sides , three angles and three vertices.
* Any triangle has at least two acute angles.
* The sum of measures of the interior angles of a triangle is 180°
* Any triangle can be classified according to :

The lengths of its sides

Equilateral triangle



All sides are equal

Isosceles triangle



Two sides only are equal

Scalene triangle



All sides are different

The measures of its angles

Right angled triangle



1 right angle
2 acute angles

obtuse angled triangle



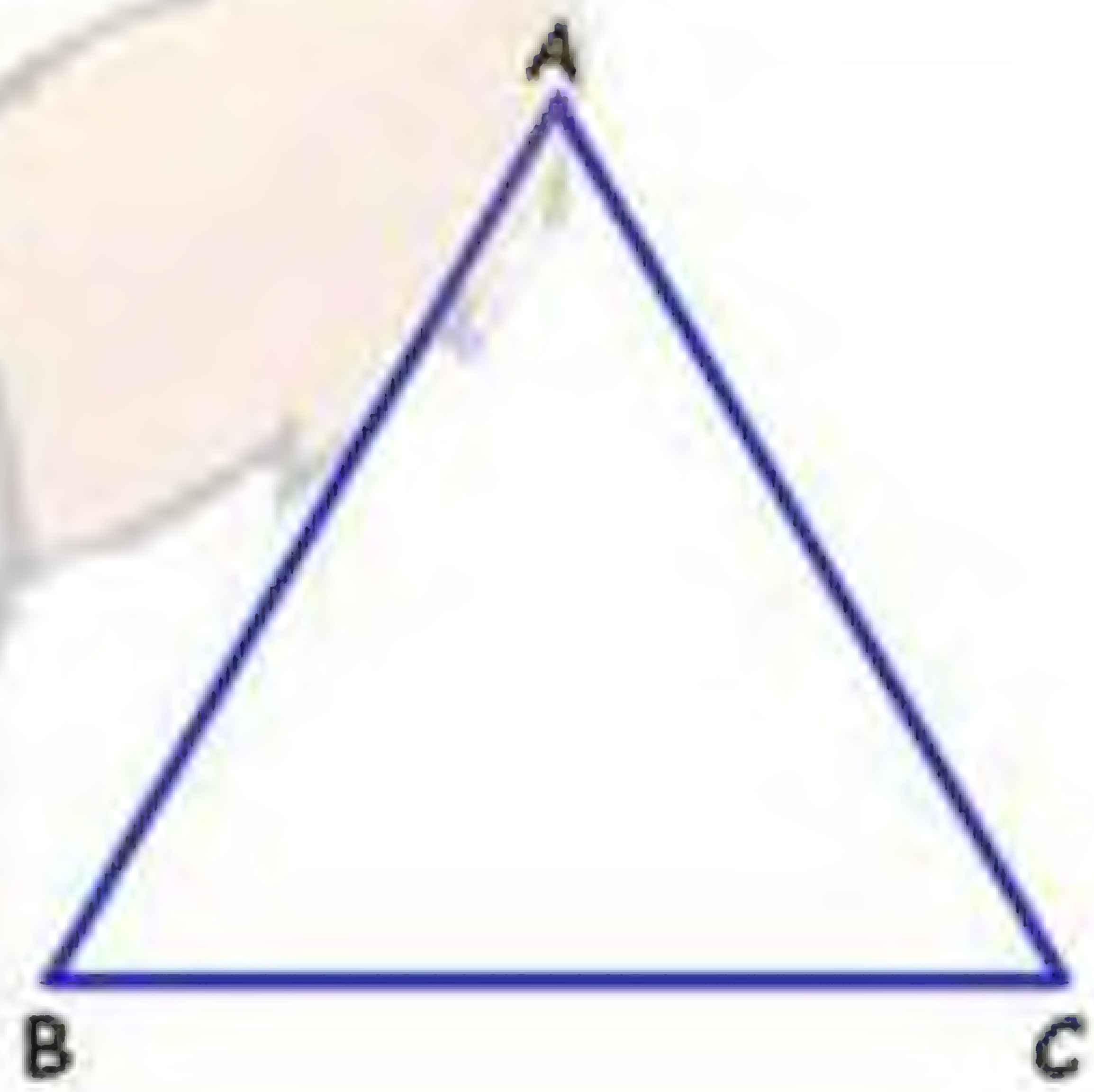
1 obtuse angle
2 acute angles

acute angled triangle



3 acute angles

Measure then complete :



AB = ... cm , BC = ... cm , AC = ... cm

The type of triangle according to its sides

Is ....

m∠ A = ... , m∠ B = ... , m∠ C = ...

The type of triangle according to its angles

Is ....

Measure then complete :

XY = ... cm , YZ = ... cm , XZ = ... cm

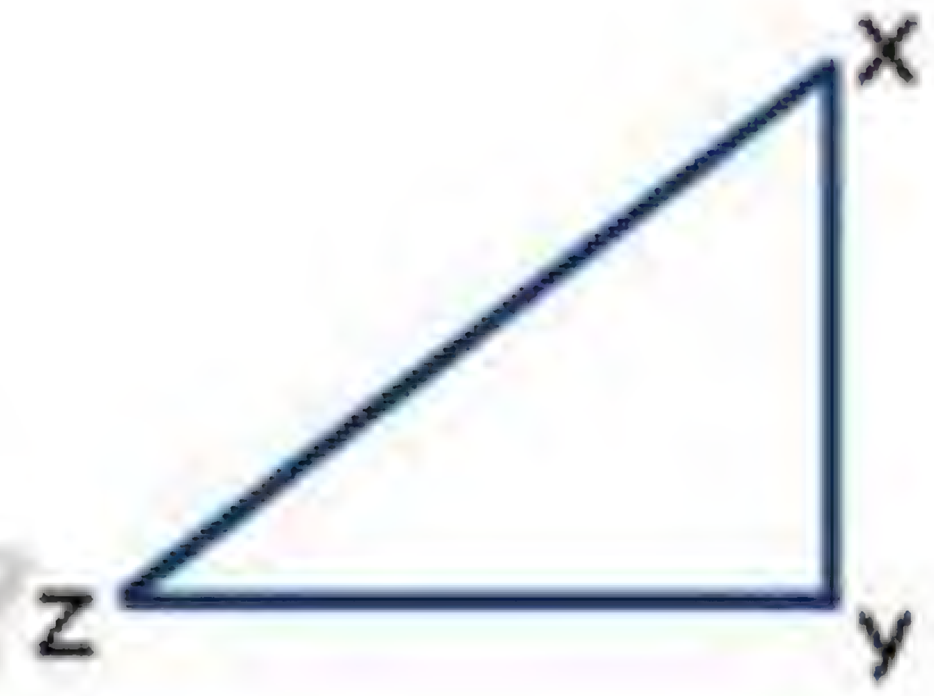
The type of triangle according to its sides

Is ....

$m\angle X$ = ...°, $m\angle Y$ = ...°, $m\angle Z$ = ...°

The type of triangle according to its angles

Is ....



Measure then complete :

XY = ... cm , YZ = ... cm , XZ = ... cm

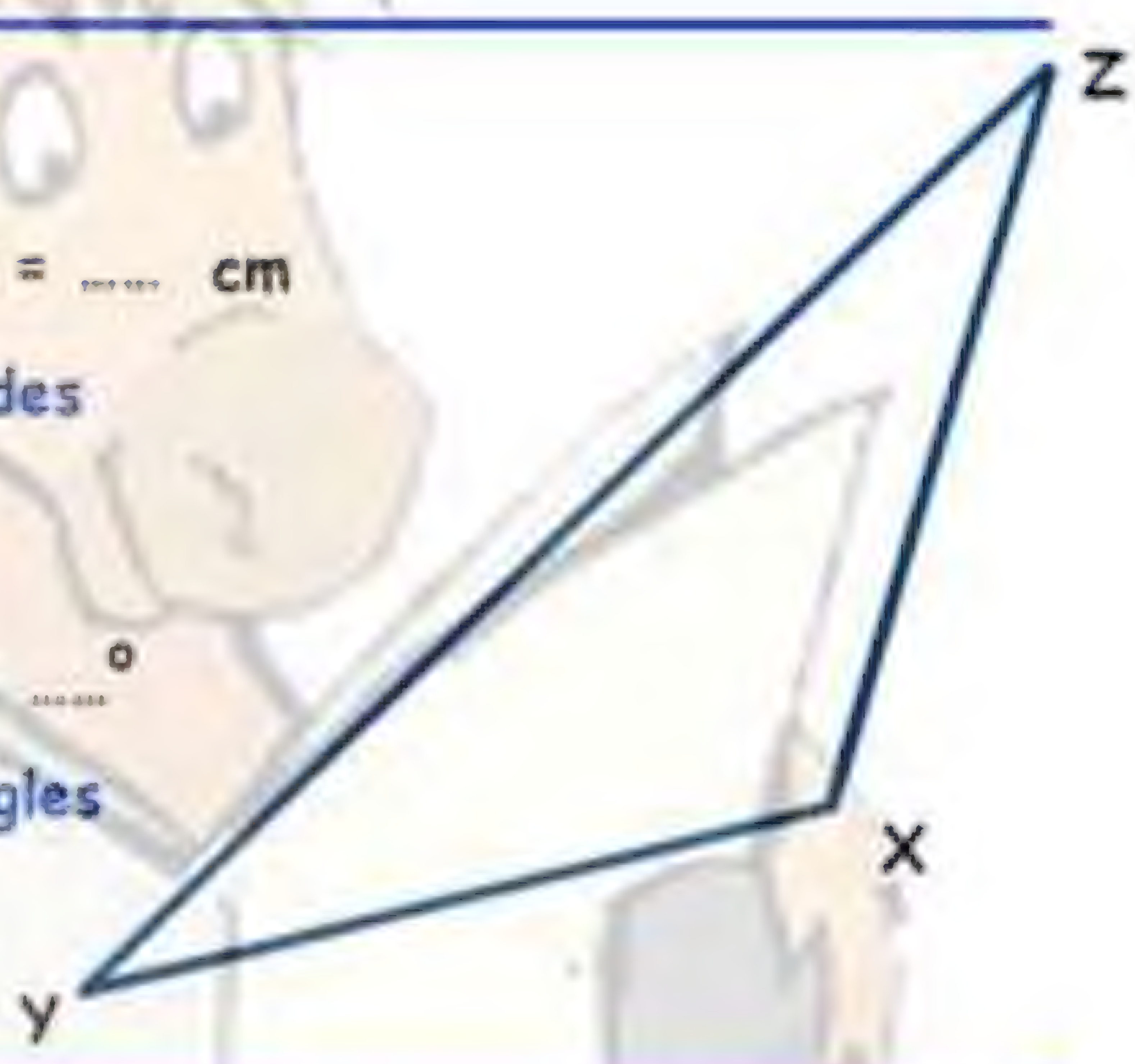
The type of triangle according to its sides

Is ....

$m\angle X$ = ...°, $m\angle Y$ = ...°, $m\angle Z$ = ...°

The type of triangle according to its angles

Is ....



Complete :

a. The triangle is a .... that has .... sides and .... angles.

b. The equilateral triangle is a triangle whose sides are ....

c. If the side lengths of a triangle are different , then the triangle is called ....

d. Any triangle has at least .... acute angles.

e. The sum of measures of the two acute angles in the right-angled triangle is ....

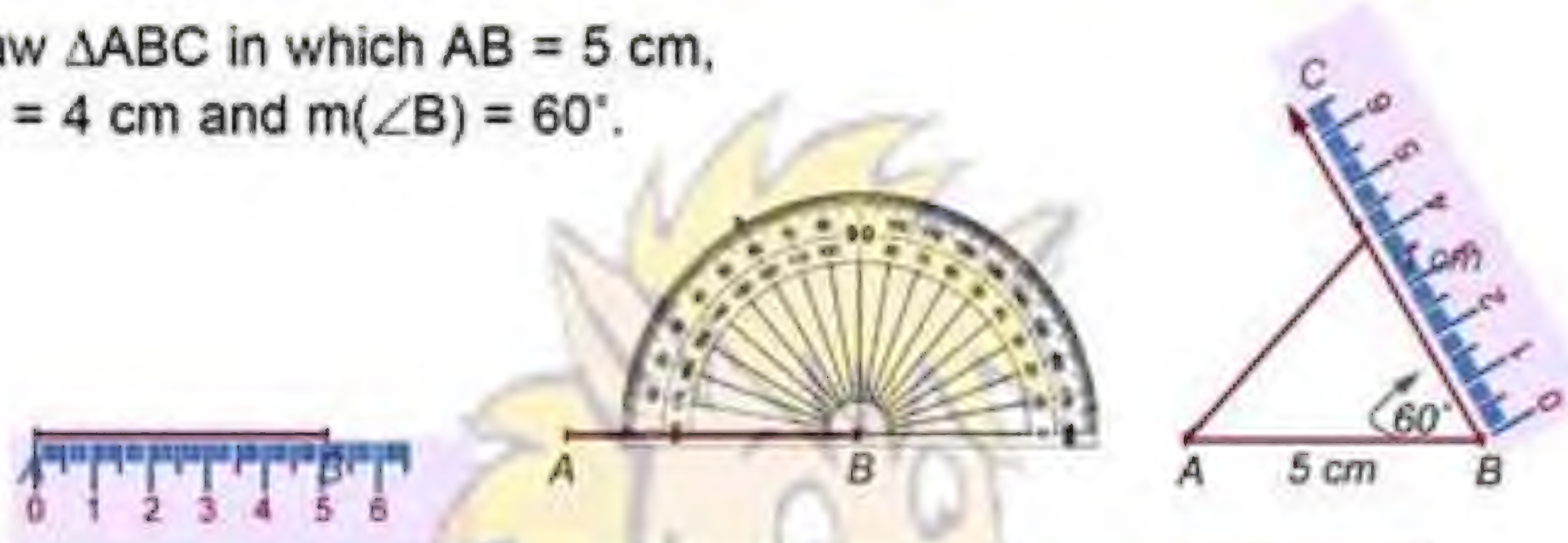
f. The triangle whose side lengths are 7 cm. , 4 cm. and 7 cm. is called .... triangle.

g. The triangle whose side lengths are 8 cm. , 6 cm. and 3 cm. is called .... triangle.

h. The triangle ABC is an equilateral triangle where AB = 5 cm. , then AC = ... cm. and BC = ... cm.

Drawing a Triangle given the Length of two of its Sides and the Measure of the Included Angle

Draw ΔABC in which AB = 5 cm,
BC = 4 cm and m(∠B) = 60°.



Draw ΔXYZ in which XY = 7 cm, YZ = 5 cm and m(∠Y) = 40°.

Draw ΔDEF in which ∠D is right, DE = 3 cm and DF = 4 cm.
Measure the length of EF, then answer the following questions.

- the length of $\overline{EF}$ = ... cm.
- the perimeter of ΔDEF
  = ...
- type of the triangle, according to
  - the measures of its angles
    ....
  - the length of its sides
    ....

Drawing a Triangle given the Length of One Side and the Measure of Two Angles

Draw ΔABC in which BC = 4 cm, $m(\angle B) = 30^\circ$ and $m(\angle C) = 80^\circ$.



Draw the triangle ABC in which $\angle B$ is a right angle, $m(\angle C) = 60^\circ$ and BC = 4 cm. Measure $\angle A$.

Draw ΔXYZ in which = XY = 7cm, $m(\angle X) = 100^\circ$, and $m(\angle Y) = 50^\circ$.
Measure ($\angle Z$)
What is the type of the triangle XYZ according to the measures of its angles? ....

Unit 2 General Exercises

1 Put (✔) for the correct statement and (✗) for the incorrect one and correct the mistake.

a If ABC is a triangle in which $m(\angle B) = 98^\circ$, then it is possible to be a right-angled triangle. ( )

b If XYZ is a triangle in which $m(\angle X) = 100^\circ$ and $m(\angle Y) = 58^\circ$, then $m(\angle Z) = 30^\circ$. ( )

c The rhombus is a quadrilateral in which all sides are equal in length. ( )

d It is possible to draw a triangle given the measures of each of its angles. ( )

---

2 Join each figure to the suitable name.



Parallelogram Rhombus Rectangle Square Trapezium

---

3 Write only one difference between each of the following.

a The square and the rectangle.

....

....

b The triangle and the circle.

....

....

c The rhombus and the parallelogram.

....

....

d The square and the cube.

....

....

---

4 Draw The triangle ABC in which AB = 3 cm, BC = 4 cm and $m(\angle B) = 90^\circ$. Measure the length of $\overline{AC}$, then complete the rectangle ABCD and answer.

a Calculate the perimeter of each of the rectangle ABCD and the triangle ABC.

b What is the type of the triangle ABC according to:
i its side lengths. ii the measure of its angles.

Unit 3

Multiples, Factors and Divisibility

Lesson 1 Multiples

If a number is a multiplied by 2 Then the product is a multiple of the number 2

2 X 5 = 10 then | 2 and 5 are factors of 10 | | 10 is a multiple for 2 and 5 |

multipls of the number 2 are 0,2,4,6,8,.....

1) under line each number that is a multiple of the number 2 :

17, 25 , 42 , 78 , 46 , 35 , 61 , 10 , 13 , 45 , 83

---

2) under line each number that is a multiple of the number 3 :

5 , 15 , 38 , 63 , 3 , 0 , 21 , 10 , 40 , 93 , 22

---

3) under line each number that is a multiple of the number 5 :

65 , 52 , 63 , 15 , 5 , 8 , 14 , 10 , 85 , 45 , 23

---

4)Write all multiples of the number 3 between 10 and 20 .

....

---

5)Write all multiples of the number 3 that less than 20 .

....

---

6)Complete with the multiples of the number 10 :

a) .... < 24 < .... b) .... < 8 < .... c) .... < 43 < ....

d) .... < 76 < .... e) .... < 28 < .... f) .... < 12 < ....

---

7)Complete with the multiples of the number 10 :

a) .... < 17 < .... b) .... < 66 < .... c) .... < 32 < ....

d) .... < 74 < .... e) .... < 46 < .... f) .... < 9 < ....

---

8)Write a number greater than 20 that is a multiple of the two nmbers 2 and 4 also a multiple of their product 8.

The number is : ....

Lesson 2 Divisibility

11 ÷ 3 = 3 and the remainder is 2 [infinite division]
Then 11 is not divisible by 3

12 ÷ 3 = 4 and the remainder is 0 [finite division]
Then 12 is divisible by 3

All multiples of a number are divisible by this number

Generally:
Any number is divisibe by another, if the remainder of the division operation is zero.

Complete the following table :

Division			Quotient	Remainder	Divisible / not divisible		
45	÷	5	....	....	45	....	5
60	÷	7	....	....	60	....	7
35	÷	4	....	....	35	....	4
28	÷	7	....	....	28	....	7
120	÷	4	....	....	120	....	4
29	÷	5	....	....	29	....	5

The number is divisible by :

Remember

- **2** — If its unit digit is (0 . 2 . 4 . 6 or 8) "even number "
- **5** — If its unit digit is (0 or 5)
- **10** — If its unit digit is 0
- **3** — If the sum of its digit is divisible by 3
- **6 (2X3)** — If the number is divisible by 2 and 3 in the same time
- **15 (3X5)** — If the number is divisible by 3 and 5 in the same time

Circle the number which is divisible by 2

30	65	97	54	26	151	368
45	212	127	641	258	654	239

Circle the number which is divisible by 3

45	36	28	456	558	652	100
154	368	554	1002	2005	12748	445

Circle the number which is divisible by 5

45	36	250	156	558	354	101
154	830	940	630	2005	12748	55551

use the following numbers to complete :

335 342 531 250 315 702 600

the numbers which are divisible by 2 : ....

the numbers which are divisible by 3 : ....

the numbers which are divisible by 5 : ....

the numbers which are divisible by 6 : ....

the numbers which are divisible by 10 : ....

the numbers which are divisible by 15 : ....

Complete the table using (✓) or (✗) :

Number	Divisible by ...					
	2	3	5	6	10	15
45						
32						
24						
30						
126						
130						
120						
456						

Lesson 3 Factors and Prime Numbers

Find the factors of number 16 :

16 = 1 X 16
= 2 X 8
= 4 X 4

the factors of 16 are 1 , 2 , 4 , 8 and 16

Do not repeat the numbers

The number one is a factor of all numbers
Every number is a factor of itself
All numbers are factors of zero except zero

Find the factors of each of the following numbers :

12 , 48

12 = ... X ....
= .... X ....
= .... X ....

The factors of 12 are
....
....
....

48 = ... X ....
= .... X ....
= .... X ....
= .... X ....
= .... X ....

The factors of 48 are
....
....

Write down 3 numbers which have 2 factors :

.... , ... , ...

Write down 3 numbers which have 3 factors :

.... , ... , ...

Prime numbers

The number that has only two factors is called a prime number.

- * The prime number is divisiblr by itself and the whole one.
- * The whole one is not a prime number because it has only one factor
- * The number Zero 6 is not a prime number because it has more than two factors
- * All prime numbers are odd numbers except the number 2.

The prime numbers between		
0	2 , 3 , 5 , 7	10
10	11 , 13 , 17 , 19	20
20	23 , 29	30
30	31 , 37	40
40	41 , 43 , 47	50
50	53 , 59	60
60	61 , 67	70
70	71 , 73 , 79	80
80	83 , 89	90
90	97	100

Circle the prime numbers :

7 , 15 , 8 , 31 , 51 , 13

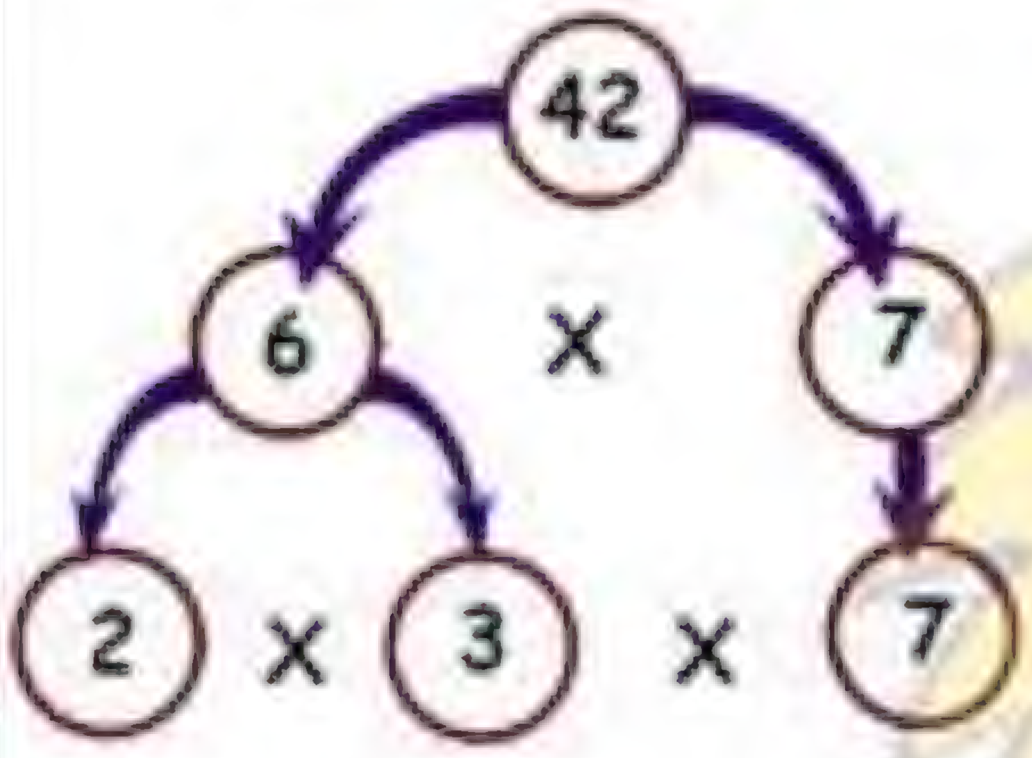
Write the prime numbers between 20 and 30 :

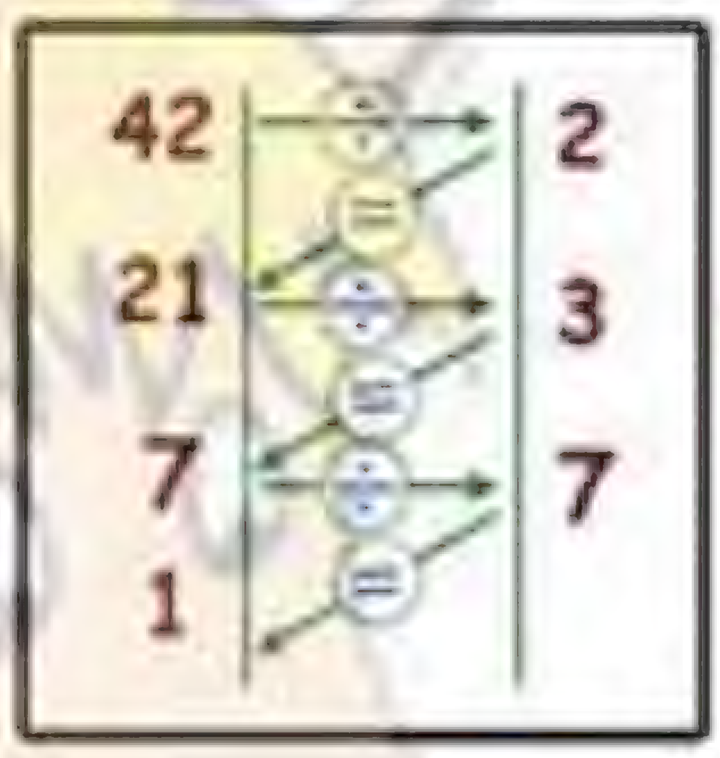
....

Lesson 4 Common Factors for Two or more Numbers and Highest Common Factor (H.C.F.)

> The highest common factor (H.C.F.) for a group of numbers is the highest number that all the numbers are divisible by.

Factorize the following numbers to its prime factors





42	2
21	3
7	7
1	

42 = 2 X 3 X 7

Factorize the following numbers to its prime factors:

(24)

24 |

24 = ... X ... X ... X ...

(18)

18 |

18 = ... X ... X ...

(100)

100 |

100 = ... X ... X ... X ...

(45)

45 |

45 = ... X ... X ... X ...

What is the number which has these prime factors 2 , 2 , 3 and 5

....

Highest Common Factor
H.C.F.

Find the common factors for 24 and 36 , then find H.C.F.

24	= 1 X 24	36	= 1 X 36
	= 2 X 12		= 2 X 18
	= 3 X 8		= 3 X 12
	= 4 X 6		= 4 X 9
			= 6 X 6

Factors of 24 are 1 , 2 , 3 , 4 , 6 , 8 , 12 and 24
Factors of 36 are 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 and 36
Common Factors are 1 , 2 , 3 , 4 , 6 and 12
H.C.F. = 12

Find the H.C.F. for 24 and 36:

24 = 2 X 2 X 2 X 3
36 = 2 X 2 X 3 X 3

H.C.F. = 2 X 2 X 3 = 12

24	2
12	2
6	2
3	3
1	

36	2
18	2
9	3
3	3
1	

Find the H.C.F. for 20 and 30:

20 = ...

30 = ...

H.C.F. = ...

20	

30	

Find the common factors for 42 , 14 and 28 , then find H.C.F.

42	14	28
= 1 X 42	= 1 X 14	= 1 X 28
= 2 X 21	= 2 X 7	= 2 X 14
= 3 X 14		= 4 X 7
= 6 X 7		

Factors of 42 are 1 , 2 , 3 , 6 , 7 , 14 , 21 and 42

Factors of 36 are 1 , 2 , 7 , and 14

Factors of 36 are 1 , 2 , 4 , 7 , 14 , and 28

Common Factors are 1 , 2 , 7 and 14

H.C.F. = 14

Find the H.C.F. for 42 , 14 and 28.

42 = 2 X 3 X 7

14 = 2 X 7

28 = 2 X 7 X 2

H.C.F. = 2 X 7 = 14

42	2
21	3
7	7
1	

14	2
7	7
1	

28	2
14	2
7	7
1	

Find the H.C.F. for 18 , 27 and 45.

18 = ...

27 = ...

45 = ...

H.C.F. = ...

Find the H.C.F. for 28 and 42:

Find the H.C.F. for 32 and 48:

Find the H.C.F. for 12 , 24 and 36.

Find the H.C.F. for 30 , 45 and 60

Lesson 5 Common Multiples for Two or more Numbers and Lowest Common Multiples (L.C.M.)

Lowest **C**ommon **M**ultiple → **L.C.M.**

The lowest common multiple for a group of numbers is the smallest number (other than zero) that is divisible by each of these numbers, then it is a multiple for each of these numbers individually and is abbriviated as L.C.M.

Write all common multiples for the numbers 4 and 6 up to 30

Multiples for 4 are : 0 , 4 , 8 , 12 , 16 , 20 , 24 and 28

Multiples for 6 are : 0 , 6 , 12 , 18 , 24 and 30

Common Multiples are : 0 , 12 and 24

L.C.M = 12

Write all common multiples for the numbers 5 , 4 and 10 up to 40

Multiples for 5 are : 0 , 5 , 10 , 15 , 20 , 25 , 30 , 35 and 40

Multiples for 4 are : 0 ,4 ,8 ,12, 16, 20, 24, 28, 32, 36 and 40

Multiples for 10 are : 0 ,10 , 20 , 30 and 40

Common Multiples are : 0 , 20 and 40

L.C.M = 20

Find H.C.F. and L.C.M for 24 and 36

24 = 2 X 2 X 2 X 3
36 = 2 X 2 X 3 X 3

H.C.F. = 2 X 2 X 3 = 12
L.C.M. = 2 X 2 X 2 X 3 X 3 = 72

24	2
12	2
6	2
3	3
1	

36	2
18	2
9	3
3	3
1	

Find H.C.F. and L.C.M for 24 , 12 and 16

24 = 2 X 2 X 2 X 3
12 = 2 X 2 X 3
16 = 2 X 2 X 2 X 2

H.C.F. = 2 X 2 = 4
L.C.M. = 2 X 2 X 2 X 3 X 2 = 48

24	2
12	2
6	2
3	3
1	

12	2
6	2
3	3
1	

16	2
8	2
4	2
2	2
1	

Find H.C.F. and L.C.M for :

a) 25 and 10

25 = ...

10 = ...

H.C.F. = ...

L.C.M = ...

b) 15 , 30 and 20

15 = ...

30 = ...

20 = ...

H.C.F. = ...

L.C.M = ...

Find the L.C.M. for the numbers $(2 \times 3 \times 7)$ and $(3 \times 3 \times 7)$.

....

....

....

....

Find the L.C.M. for the numbers (2×15) and (5×12).

....

....

....

....

Put (✔) for the correct statement and (✗) for the incorrect one and correct the mistake.

a The number 63 is divisible by 6. ( )

b The number 17 is a prime number. ( )

c 0 and 7 are multiples of the number 7. ( )

d The H.C.F. for the two numbers 8 and 24 is 4. ( )

e The L.C.M. for the two numbers 8 and 24 is 8. ( )

Complete.

a The multiples of 6 which are between 20 and 40 are ......

b The factors of the number 35 are ......

Unit 4

Measurement

The Pertimeter & The Area





The square

The perimeter = Side length X 4

The side length = Perimeter ÷ 4

The area = Side length X Side length (itself)

$P = S \times 4$

$S = P \div 4$

$A = S \times S$

The Rectangle

The perimeter = (Length + Width) X 2

The length = (perimeter ÷ 2) – the width

The width = (perimeter ÷ 2) – the length

$P = (L + W) \times 2$

$L = \frac{P}{2} - W$

$W = \frac{P}{2} - W$

The area = Length X width

The length = the area ÷ the width

The width = The area ÷ the length

$A = L \times W$

$L = A \div W$

$W = A \div L$

Lesson 1 Lengths

Complete.

3 metres = ... centimetres
4 metres = ... centimetres
...... metres = 700 centimetres
...... metres = 300 centimetres
... dm = 70 cm = ... mm
... dm = ... cm = 600 mm
3 dm = ... cm = ... mm
8 km = ... m = ... dm

...... cm = 40 mm
...... cm = 60 mm
35 dm = ... cm
9000 m = ... km
2 cm = ... mm
...... m = 400 cm
5 dm = ... cm
3 km = ... m

Choose the suitable unit to measure each of the following.

a The distance between Cairo and Alexandria. (mm, dm, km)
b The height of a building. (mm, dm, m)
c The height of a man. (km, cm, mm)
d The length of an ant. (km, mm, m)

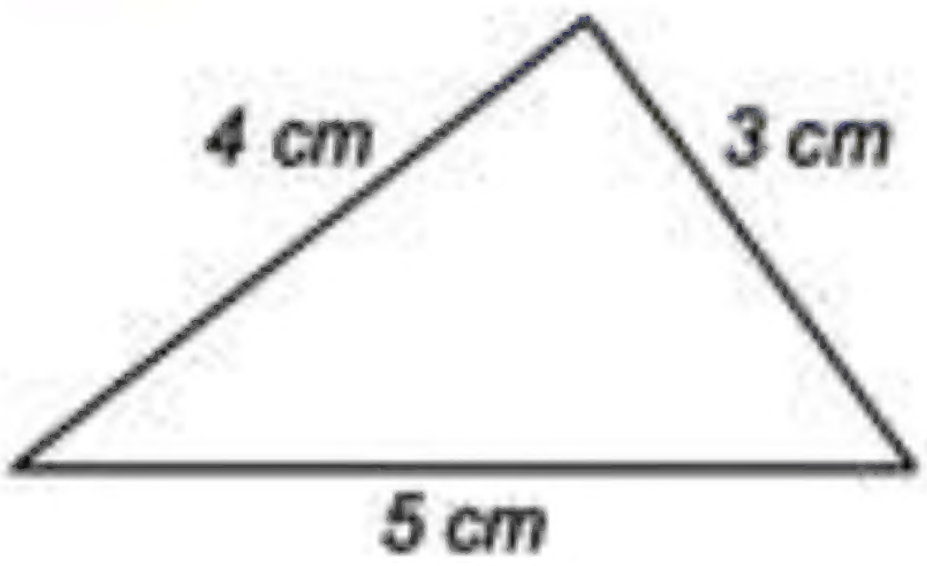
Choose the closest answer.

a The length of a taxi = ... (2 km, 20 m, 200 cm)
b The length of my pen = ... ($\frac{1}{2}$ km, 15 dm, 15 cm)
c The height of my brother = ... (3 m, 160 cm, 160 mm)
d My mother bought a piece of cloth of length = ...
(3 km, 3 m, 3 cm, 3 mm)

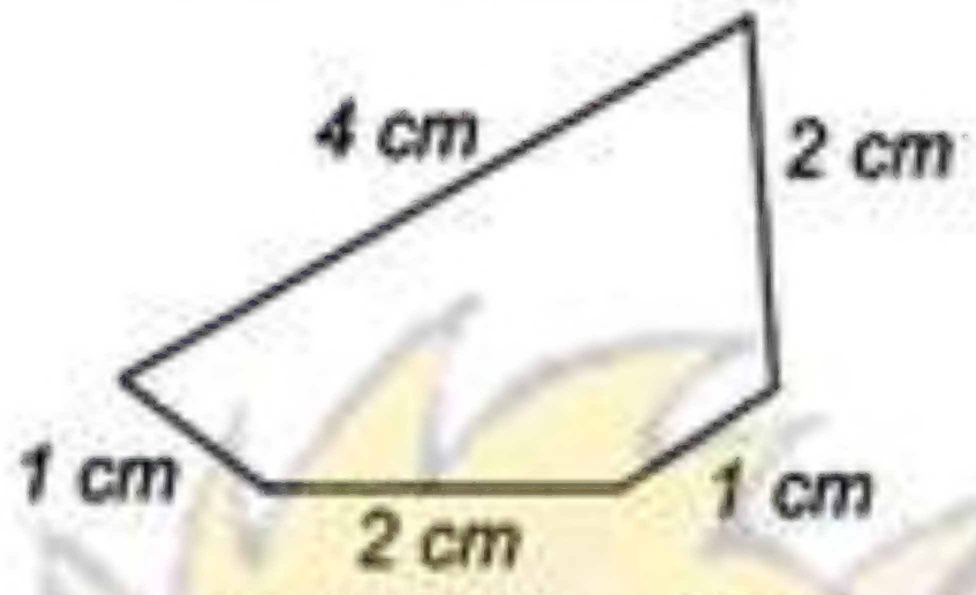
Complete using a suitable sign <, >, or = in each ☐.

3 km ☐ 300 m
5 000 mm ☐ 5 metres
8 dm ☐ 80 cm
6 km ☐ 75 000 cm

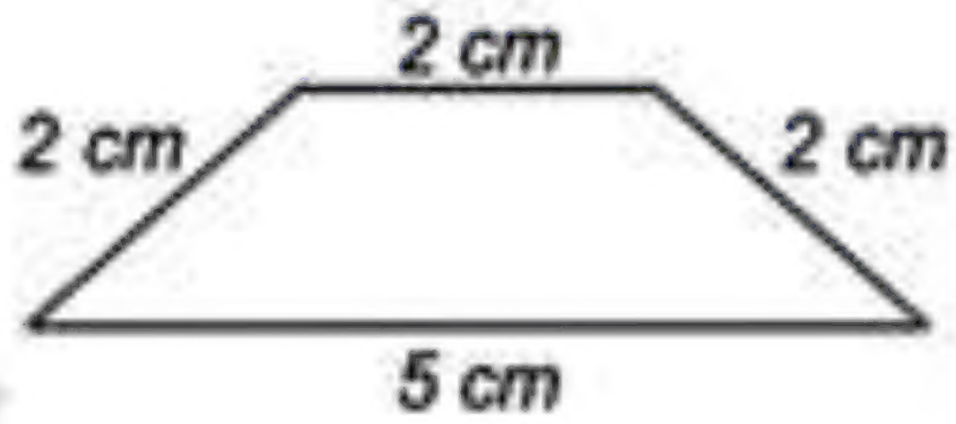
Mr. Mohamed Nasr El Din 01210901817-01004201098



Perimeter of the triangle = ... cm



Perimeter of the polygon = ... cm



Perimeter of the polygon = ... cm

---

[1] Find the perimeter of a square with side length 6 cm.

---

[2] Find the perimeter of a rectangle whose dimensions are 8 cm. and 5 cm.

---

[3] The perimeter of a square is 32 cm . Find The sidel length

---

[4] The perimeter of a rectangle is 28cm. and its length = 10cm Find : The width

---

[5] If the sum of the perimeters of two squares is 48 cm. and the side length of one of them is 7 cm.
Find the side length of the second square.

Lesson 2 The Area

The square centimetre cm^2

is the area of a square of side length **1** cm



The square decimetre = 100 cm^2
The square metre = 100 dm^2 = 10 000 cm^2
the square kilometre = 1 000 000 m^2

Choose the suitable unit to measure each of the following.

a Area of the floor of the room. (km^2 , dm^2 , cm^2 , m^2)
b Area of the agricultural land in Egypt. (km^2 , dm^2 , cm^2 , m^2)
c Area of the surface of a book page. (km^2 , cm^2 , m^2)
d Area of the playground of your school. (km^2 , cm^2 , m^2 , dm^2)
e Area of the eastern desert. (km^2 , cm^2 , dm^2)

Choose the closest answer.

a Area of the flat which I live in is ......
($75\ km^2$, $75\ cm^2$, $75\ m^2$, $75\ dm^2$)

b Area of the classroom in our school is ......
($24\ m^2$, $24\ cm^2$, $24\ km^2$)

c A pupil in Primary 4 used his geometric instruments to draw a rectangle whose area is ......
($12\ m^2$, $12\ dm^2$, $12\ cm^2$)

d Area of the tile used in tilling our house is ......
($25\ dm^2$, $25\ cm^2$, $25\ m^2$)

Complete.

$3\ m^2$ = ... dm^2

$\frac{1}{2}\ km^2$ = ... m^2

920 000 cm^2 = ... m^2

$70\ m^2$ = ... cm^2

2 000 dm^2 = ... m^2

6 000 000 m^2 = ... km^2

[1] Find the area and the perimeter of a square with side length 6 cm.

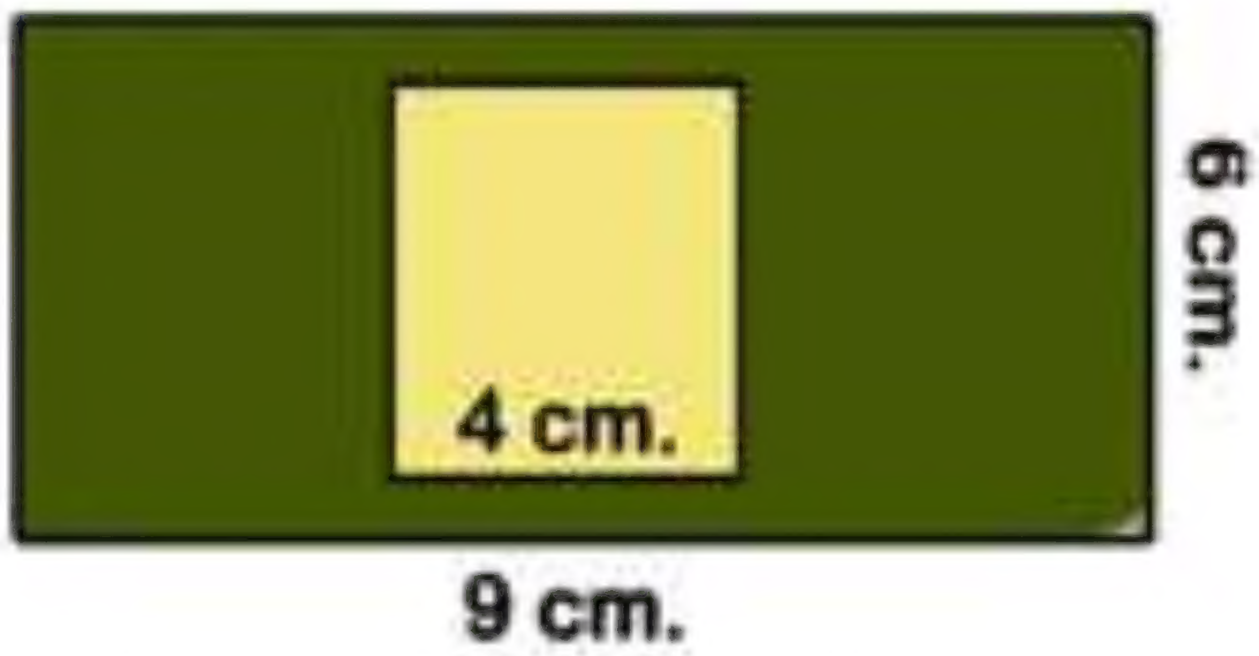
[2] Find the area and the perimeter of a rectangle whose dimensions are 8 cm. and 5 cm.

[3] The perimeter of a square is 32 cm . Find
(a) The sidel length (b) The area.

[4] The perimeter of a rectangle is 28cm. and its length = 10cm
Find : (a) The width (b) The area .

[5] The area of a rectangle is 48 cm2. and its width = 6 cm.
Find: (a) The length. (b) the perimeter .

[6] The drawn figure is a rectangle whose dimensions are 9 cm. and 6 cm.
A square of side length 4 cm. is cut from it.
Calculate : The area of the remaining part



....

....

....

....

....

....

[7] If we have a rectangular-shape hall whose dimensions are 8 metres and 6 metres, how many tiles are needed to tile this hall, given that the side length of the required squared-shape tiles is 20 cm. ?

....

....

....

....

....

....

[8] It is wanted to make a frame to a rectangular-shaped picture whose dimensions are 40 cm. and 60 cm. If the cost of one metre of the frame is 3 pounds, what is the cost of the frame ?

....

....

....

....

....